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IS Success Model and Perceived IT Value

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Abstract

IS Success Model by DeLone and McLean (1992, 2003) has been used to explain how information systems create value for organizations. However, IS Success Model does not fully address how users perceive value of an information system. It assumes that the information quality, system quality, and service quality automatically generate user satisfaction. Users will not be satisfied with information systems of high quality when they perceive that the benefits of using a system do not match or exceed the cost (i.e., efforts and time-investment) of learning or using the system. Numerous high-profile IT investment failures due to employee dissatisfaction and customer dissatisfaction illustrate the need for understanding the perceived value of IT. Therefore, a new construct called Perceived IT Value (PITV) needs to be introduced in IS Success Model to address why some high quality information systems fail to satisfy users. In this paper, I propose a research model that expands IS Success Model to reflect PITV.

Keywords: IS Success Model, Perceived IT Value, Customer Satisfaction, Customer Loyalty

Introduction

Information Technology (IT) creates values for organizations in numerous ways internally and externally. Internally, IT adds value by improving business processes. IT offers better and faster access to information and provides business intelligence for effective decision making. Furthermore, IT can create a new virtual working environment that can foster innovation and improve productivity. There is a substantial body of knowledge as to how IT can bring numerous benefits to organizations.

Unlike the internal aspect of IT, however, the external aspect of IT value creation has received relatively little attention. As the role of IT transforms from back-office utility to a strategic force, more business executives expect IT to play an active role in enhancing value-added services, relationship with customers, and brand management (Agarwal and Sambamurthy 2002). We need to better understand how IT contributes to build superior customer satisfaction and loyalty.

Information technologies are either products or services. For software companies, their final products are pre-packaged software products. For financial institutes, their products are information services enabled by information technologies. Seeking how goods or services satisfy customers has been a major focus of the marketing discipline. Marketing may serve as a reference discipline to understand how IT can satisfy their customers (Keen 1980).

The Quality-Value-Loyalty Chain

As customer satisfaction and loyalty are a key driver for long-term success for a firm, marketing researchers have attempted to identify and understand the factors that lead to customer satisfaction and loyalty. Growing body of literature and anecdotal evidence suggest that quality and perceived value are possible factors that affect customer loyalty (Parasuraman and Grewal 2000). Researchers believe quality enhances perceived value, which, in turn, contributes to customer satisfaction and loyalty (See Figure 1).

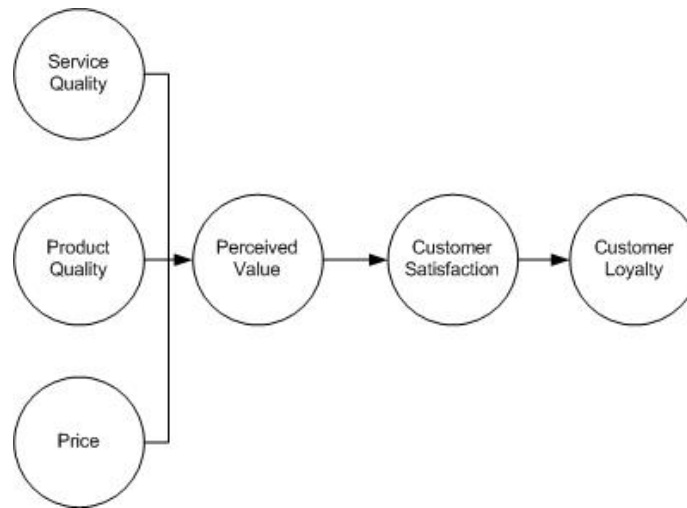
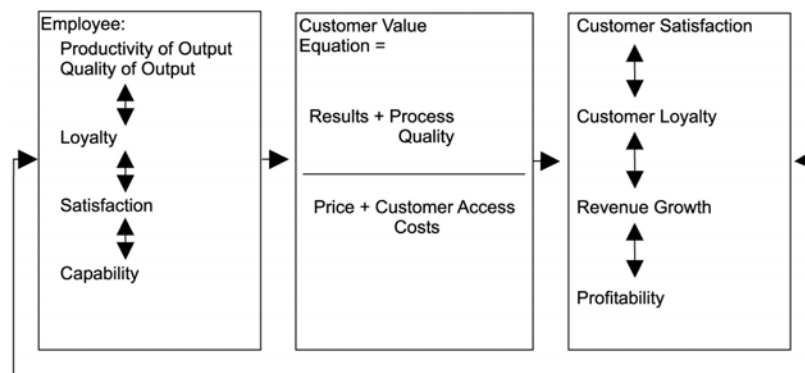


Figure 1. Key drivers of Customer Loyalty

Perceived value, the key determinant of customer satisfaction and loyalty, is the resulting experience created for customers. It is made of a “receiving part” – that is, the benefits a user draw from goods and services, and a “giving part”, that is, the customer’s monetary and nonmonetary costs of acquiring the goods and services. The quality-value-loyalty model is equivalent of Heskett et al.’s (1997, 2003) Value-Profit Chain (See Figure 2) and Reichheld’s (1996)’s loyalty model.



Source: Heskett *et al.* (1997, p.12)

Figure 2. Heskett, et al.'s Value-Profit Chain

IS Success Model by DeLone and McLean (1992, 2003) has been used to explain how information systems create value for organizations. It says that system quality, information quality, and service quality determine the system usage and satisfaction; and, in turn, system usage and satisfaction influence business performance (See Figure 3).

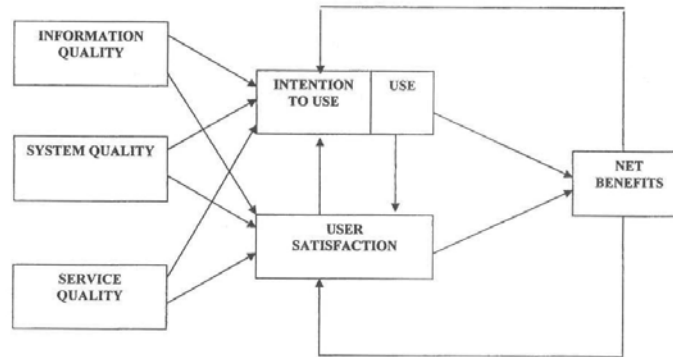


Figure 3. DeLone & McLean IS Success Model

However, this premise has limitations. It does not fully address how users perceive value of an information system. It assumes that the information quality, system quality, and service quality automatically generate user satisfaction. Users will not be satisfied with information systems of high quality when they perceive that the benefits of using a system do not match or exceed the cost (i.e., efforts and time-investment) of learning or using the system. Numerous high-profile IT investment failures due to employee dissatisfaction and customer dissatisfaction illustrate the need for understanding the perceived value of IT. Therefore, a new construct called Perceived IT Value (PITV) needs to be introduced in IS Success Model to address why some high quality information systems fail to satisfy users (Figure 4).

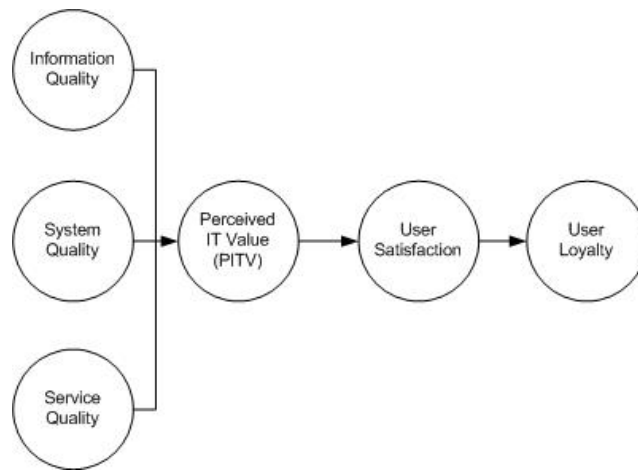


Figure 4. IT Quality-Perceived IT value-Loyalty Model

Role of IT on Customer Satisfaction and Employee Satisfaction

To reflect the growing complexities of marketing services relative to marketing goods, Kotler (1994) proposed a triangle model of services marketing. In addition to external marketing, mainly concerned about marketing of goods with the “4 Ps” (product, price, promotion, and place or channels), the effective marketing of services requires internal and interactive marketing. Internal marketing is related to considering service employees as internal customers and providing them with suitable training, support, motivation, and rewards to serve external customers well. Interactive marketing deals with managing interactions between employees and customers.

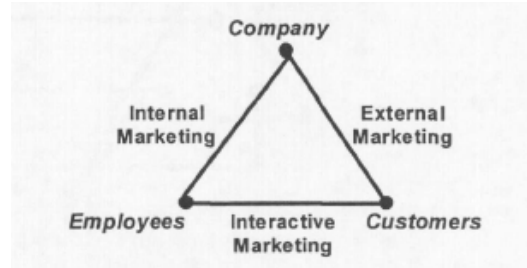


Figure 5. Kotler's (1994) Triangle Model

As information technologies play an increasingly important role in serving customers, the triangle model needs to be supplemented by a new component reflecting the current proliferation of technology in the marketing process. Parasuraman (1996) proposed an enhanced pyramid model with technology as a third dimension. The pyramid model includes three linkages: company-technology, technology-employee, and technology-customer.

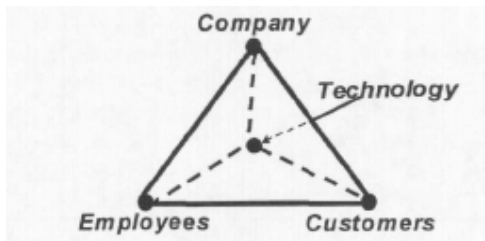


Figure 6. Parasuraman's (1996) Pyramid Model

IS Success Model has mainly been used for understanding internal IT value and does not adequately address how IT can generate value to external customers. As IT becomes pervasive, it is necessary to approach the IS Success model from the perspective of all stakeholders including employees and customers. IT can improve employee productivity, which increases employee satisfaction. It then influences customer satisfaction by enhancing customer value, which in turn increase customer loyalty and firm performance (Heskett et al. 2003). Here I propose a new research model.

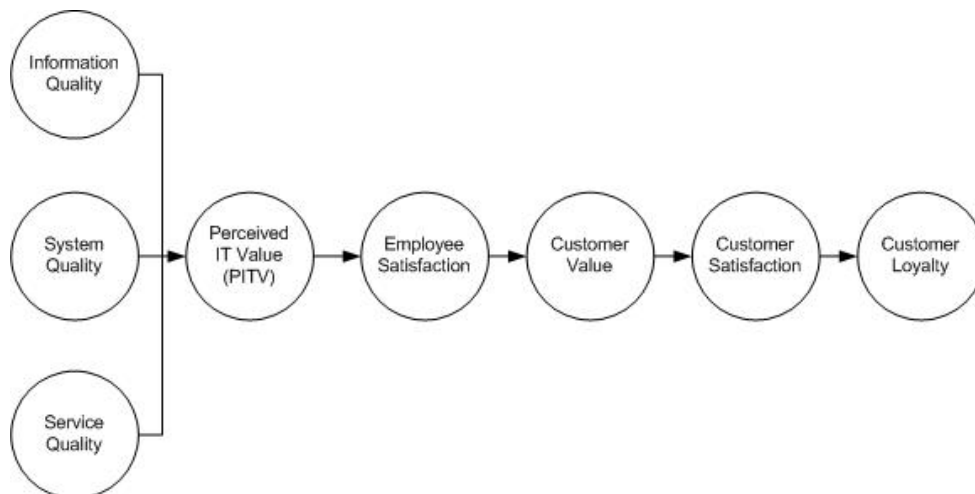


Figure 7. Research Model

Conclusion

My research goals are forth-folds. First, by introducing and examining “Perceived IT Value (PITV)” construct, I answer an anomaly that IS Success Theory could not explain why some information systems fail to satisfy users despite high information and system quality. PITV is defined as the resulting experience of using information technologies. It is made of a get component (the benefits a user draws from IT) and a giving component (the user’s monetary and nonmonetary costs of acquiring the IT). To develop the measurement of PITV, extensive literature review and expert interviews will be conducted. After that, multiple exploratory and confirmatory factor analyses will be conducted. Once the measurement of PITV is developed, the impact of information, system, and service quality on PITV will be examined. Also, a mediation relationship of PITV between quality and user satisfaction will be investigated.

Perceived Usefulness (PU) construct and Perceived Ease of Use (PEU) construct in Davis’ (1989) Technology Acceptance Model (TAM) is similar to PITV in that both measure users’ perceptions about information technologies. In addition, PU consists of a “receiving part” while PEU consists of a “giving part” of Perceived IT Value. Thus, second goal is to compare PITV construct with PU and PEU. My proposition is that PITV is more encompassing and comprehensive than PU or PEU to explain why users are satisfied with IT. Structural equation modeling will be used for this research aim.

The third goal is to compare the proposed research model with existing IS Success Model and Wixom and Todd (2005)’s model. I anticipate that the proposed model has a greater explanatory power than IS Success Model. In addition, the research model will be compared to the Wixom and Todd (2005) model. It was Wixom and Todd (2005) who proposed a model integrating TAM and IS Success model. Their argument is very compelling. TAM is excellent in predicting system usage, but it does not give much guideline to design the system. On the other hand, IS Success Model effectively explains how to design IS system but is ineffective in predicting the usage. By integrating these models, they argue that the system developer can make a system with high quality and usage. Their exploratory study supported their argument. To compare three competing models, I will conduct structural equation modeling with LISREL.

As the effects of IT are increasingly intangible and interwoven with a variety of organizational aspects, the evaluation of the costs and benefits of IT projects becomes more difficult. Traditional approaches like return on investment (ROI) techniques and cost-benefit analysis are more appropriate when the main goal of IT investment is simply to reduce costs or increase outputs. Finding right tools to measure enterprise-wide and intangible benefits is more complex and often problematic. When evaluating IT investment, IT managers concern whether the IT initiative would create value for customers. However, there is no clear framework to guide the decision. In this study, I will explore whether PITV construct can instruct IT managers to identify IT projects that can generate significant value to customers. Successful IT project must create high perceived value to customers or employees so that they are willing to use them. By measuring PITV, IT managers may increase the likelihood to make successful IT investment decision.

Here is a summary of propositions.

- P1: Perceived IT Value (PITV) is a unique construct
- P2: PITV has greater explanatory power to user satisfaction than IT quality such as information, system, or service quality do.
- P3: PITV has greater explanatory power to user satisfaction than perceived usefulness (PU) and ease of use (EOU) constructs do.
- P4: The proposed research model better explains user satisfaction than existing IS Success Model and Wixom and Todd (2005) model do.
- P5. PITV is an indicator to predict whether IT project will succeed.

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